

REMARKS

Claims 1-70 are pending in this Application. Claims 1-70 were rejected by the Examiner.

The Applicant has amended paragraphs [0007], [0027], [0030], [0031], and [0038] to correct minor typographical errors. No new matter has been added.

The Applicant has amended claims 1, 11, 21, 31, 40, 49-51, 53, 55, 57, 59, and 61-70. Claim 52 has been amended to correct its dependency. All claim amendments are fully supported by the specification. No new matter has been added.

Claim Rejections

35 U.S.C. §102(b) – Claims 1-5, 10-15, 20-25, 30-35, 40-44, and 51-70

The Examiner rejected claims 1-5, 10-15, 20-25, 30-35, 40-44, and 51-70 under 35 U.S.C. §102(b) as being anticipated by Okajima et al. (US Publication No. 2001/0018346).

The Okajima reference discloses a method and apparatus wherein a mobile station communicates to another station through a plurality of base stations and a network. There is no disclosure, teaching, or suggestion in the Okajima reference of receiving an "undesired communication signal originating from another cell, identifying the another cell and identifying [a] selected undesired communication of the another cell." Nor is there any disclosure, teaching or suggestion in the Okajima reference of producing a channel estimate for a selected communication signal "based on that selected undesired communication."

The Applicants' claimed invention as recited in amended independent claim 1 recites:

A method for receiving at least one desired communication signal in a wireless communication system, the method comprising:
receiving a plurality of communication signals;
selecting communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one undesired communication signal originating from another cell, the selected communication determined by identifying the another cell and identifying the selected undesired communication of the another cell;
producing a channel estimate for each selected communication signal based on the cell of that selected undesired communication; and
jointly detecting data of the selected communication signals.

The Applicants' amended independent claim 11 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:

means for receiving a plurality of communication signals;

means for selecting communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one undesired communication signal originating from another cell, the selected undesired communication determined by identifying the another cell and identifying the selected undesired communication of the another cell;

means for producing a channel estimate for each selected communication signal based on the cell of that selected undesired communication signal; and

means for jointly detecting data of the selected communication signals.

The Applicants' amended independent claim 21 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:

an antenna receiving a plurality of communication signals;

a communication selection device selects communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one undesired communication signal originating from another cell, the selected undesired communication determined by identifying the another cell and identifying the selected undesired communication of the another cell;

a multiple source channel estimation device and a channel estimate selector/combiner produces a channel estimate for each selected communication signal based on the cell of that selected undesired communication signal; and

a joint detector jointly detects data of the selected communication signals.

The Applicants' amended independent claim 31 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

means for receiving a plurality of communication signals;

means for selecting communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one undesired communication signal originating from another cell, the selected undesired communication determined by identifying the another cell and identifying the selected undesired communication of the another cell;

means for producing a channel estimate for each selected communication signal based on the cell of that selected undesired communication signal; and

means for jointly detecting data of the selected communication signals.

The Applicants' amended independent claim 40 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

an antenna receiving a plurality of communication signals;

a communication selection device selects communication signals of the plurality of communication signals, the selected communication signals including each desired communication signal and at least one undesired communication signal originating from another cell, the selected undesired communication determined by identifying the another cell and identifying the selected undesired communication of the another cell;

a multiple source channel estimation device and a channel estimate selector/combiner produces a channel estimate for each selected communication signal based on the cell of that selected undesired communication signal; and

a joint detector jointly detects data of the selected communication signals.

Amended independent claim 51 recites:

A method for receiving at least one desired communication signal, the method comprising:

providing a joint detector capable of processing N communication signals;
receiving a plurality of communication signals;
selecting N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level; the selecting of the N communication signals evaluates communication signals of multiple identified cells; and
jointly detecting data of the N selected communication signals using the joint detector.

Amended independent claim 53 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:

joint detecting means capable of processing N communication signals;
means for receiving a plurality of communication signals;
means for selecting N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level; the selecting of the N communication signals evaluates communication signals of multiple identified cells; and
the joint detecting means for joint detecting data of the N selected communication signals.

Amended independent claim 55 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:

a joint detector capable of processing N communication signals;
an antenna receiving a plurality of communication signals;
a communication selector for selecting N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal

and having other undesired communication signals having a highest received power level; the selecting of the N communication signals evaluates communication signals of multiple cells; and

the joint detector jointly detecting data of the N selected communication signals.

Amended independent claim 57 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

joint detecting means capable of processing N communication signals;

means for receiving a plurality of communication signals;

means for selecting N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level; the selecting of the N communication signals evaluates communication signals of multiple cells; and

the joint detecting means for joint detecting data of the N selected communication signals.

Amended independent claim 59 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

a joint detector capable of processing N communication signals;

an antenna receiving a plurality of communication signals;

a communication selector for selecting N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level; the selecting of the N communication signals evaluates communication signals of multiple identified cells; and

the joint detector jointly detecting data of the N selected communication signals.

Amended independent claim 61 recites:

A method for receiving at least one desired communication signal, the method comprising:
 providing a joint detector capable of processing N communication signals;
 receiving a plurality of communication signals;
 selecting at a maximum of N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level exceeding a threshold value; the selecting of the maximum of N communication signals evaluates communication signals of multiple identified cells; and
 jointly detecting data of the N selected communication signals using the joint detector.

Amended independent claim 62 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:
 a joint detecting means capable of processing N communication signals;
 means for receiving a plurality of communication signals;
 means for selecting at a maximum of N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level exceeding a threshold value; the selecting of the maximum of N communication signals evaluates communication signals of multiple identified cells; and
 the joint detecting means for jointly detecting data of the N selected communication signals using the joint detector.

Amended independent claim 63 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:

a joint detector capable of processing N communication signals;
an antenna for receiving a plurality of communication signals;
a communication selector for selecting at a maximum of N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level exceeding a threshold value; the selecting of the maximum of N communication signals evaluates communication signals of multiple identified cells; and
the joint detector for jointly detecting data of the N selected communication signals using the joint detector.

Amended independent claim 64 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

a joint detecting means capable of processing N communication signals;

means for receiving a plurality of communication signals;

means for selecting at a maximum of N communication signals of the plurality of communication signals, the selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level exceeding a threshold value; the selecting of the maximum of N communication signals evaluates communication signals of multiple identified cells; and

the joint detecting means for jointly detecting data of the N selected communication signals using the joint detector.

Amended independent claim 65 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

a joint detector capable of processing N communication signals;

an antenna for receiving a plurality of communication signals;

a communication selector for selecting at a maximum of N communication signals of the plurality of communication signals, the

selected N communication signals including each desired communication signal and having other undesired communication signals having a highest received power level exceeding a threshold value; the selecting of the maximum of N communication signals evaluates communication signals of multiple identified cells; and
the joint detector for jointly detecting data of the N selected communication signals using the joint detector.

Amended independent claim 66 recites:

A method for receiving at least one desired communication signal, the method comprising:
receiving a plurality of communication signals;
providing a communication selecting device for selecting communication signals, the communication selecting device selectively operates in a plurality of modes, the modes including a first mode where only communication signals from a cell of the communication selecting device are selected and a second mode where communication signals from multiple identified cells are potentially selected; and
jointly detecting data of the selected communication signals.

Amended independent claim 67 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:
means for receiving a plurality of communication signals;
communication selecting means for selecting communication signals, the communication selecting device selectively operates in a plurality of modes, the modes including a first mode where only communication signals from a cell of the communication selecting device are selected and a second mode where communication signals from multiple identified cells are potentially selected; and
means for jointly detecting data of the selected communication signals.

Amended independent claim 68 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:

an antenna receiving a plurality of communication signals;

a communication selecting device for selecting communication signals, the communication selecting device selectively operates in a plurality of modes, the modes including a first mode where only communication signals from a cell of the communication selecting device are selected and a second mode where communication signals from multiple identified cells are potentially selected; and

a joint detector jointly detecting data of the selected communication signals.

Amended independent claim 69 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

means for receiving a plurality of communication signals;

communication selecting means for selecting communication signals, the communication selecting device selectively operates in a plurality of modes, the modes including a first mode where only communication signals from a cell of the communication selecting device are selected and a second mode where communication signals from multiple identified cells are potentially selected; and

means for jointly detecting data of the selected communication signals.

Amended independent claim 70 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

an antenna receiving a plurality of communication signals;

a communication selecting device for selecting communication signals, the communication selecting device selectively operates in a plurality of modes, the modes including a first mode where only communication signals from a cell of the communication

selecting device are selected and a second mode where communication signals from multiple identified cells are potentially selected; and
a joint detector jointly detecting data of the selected communication signals.

which is not disclosed, suggested, or taught anywhere within the Okajima reference.

Accordingly, the Applicants' amended independent claims 1, 11, 21, 31, 40, 51, 53, 55, 57, 59, and 61-70 are patentable over the Okajima reference.

Claims 2-5 and 10 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 1 and are therefore patentable for at least the same reasons as patentable amended independent claim 1.

Claims 12-15 and 10 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 11 and are therefore patentable for at least the same reasons as patentable amended independent claim 11.

Claims 22-25 and 30 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 21 and are therefore patentable for at least the same reasons as patentable amended independent claim 21.

Claims 32-35 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 31 and are therefore patentable for at least the same reasons as patentable amended independent claim 31.

Claims 41-44 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 40 and are therefore patentable for at least the same reasons as patentable amended independent claim 40.

Amended claim 52 depends from the Applicants' patentable amended independent claim 51 and is therefore patentable for at least the same reasons as patentable amended independent claim 51.

Claim 54 depends from the Applicants' patentable amended independent claim 53 and is therefore patentable for at least the same reasons as patentable amended independent claim 53.

Claim 56 depends from the Applicants' patentable amended independent claim 55 and is therefore patentable for at least the same reasons as patentable amended independent claim 55.

Claim 58 depends from the Applicants' patentable amended independent claim 57 and is therefore patentable for at least the same reasons as patentable amended independent claim 57.

Claim 60 depends from the Applicants' patentable amended independent claim 59 and is therefore patentable for at least the same reasons as patentable amended independent claim 59.

Since all amended independent claims rejected by the Examiner under 35 U.S.C. §102 are patentably distinct from the Okajima reference, the Applicants' respectfully request the Examiner withdraw the rejections.

35 U.S.C. §103(a) – Claims 6, 16, 26, 36, 45, and 49-50

The Examiner rejected claims 6, 16, 26, 36, 45, and 49-50 under 35 U.S.C. §103(a) as being unpatentable over Okajima et al. (US Publication No. 2001/0018346) in view of Hasegawa (US Ref. No. 5,862,476).

There is no disclosure, teaching, or suggestion in the Okajima reference of receiving an "undesired communication signal originating from another cell, identifying the another cell and identifying [a] selected undesired communication of the another cell." Nor is there any disclosure, teaching or suggestion in the Okajima reference of producing a channel estimate for a selected communication signal "based on that selected undesired communication." Furthermore, the Hasegawa reference fails to cure these deficiencies.

Accordingly, Applicants' claimed invention as claimed in amended independent claims 1, 11, 21, 31, and 40 are patentably distinct from the Okajima and Hasegawa references, whether taken alone or in combination with one another.

Claim 6 depends from the Applicants' patentable amended independent claim 1, and is therefore patentable for at least the same reasons as Applicants' patentable amended independent claim 1.

Claim 16 depends from the Applicants' patentable amended independent claim 11, and is therefore patentable for at least the same reasons as Applicants' patentable amended independent claim 11.

Claim 26 depends from the Applicants' patentable amended independent claim 21, and is therefore patentable for at least the same reasons as Applicants' patentable amended independent claim 21.

Claim 36 depends from the Applicants' patentable amended independent claim 31, and is therefore patentable for at least the same reasons as Applicants' patentable amended independent claim 31.

Claim 45 depends from the Applicants' patentable amended independent claim 40, and is therefore patentable for at least the same reasons as Applicants' patentable amended independent claim 40.

The Applicants' amended independent claim 49 recites:

A wireless transmit/receive unit for receiving at least one desired communication signal, the wireless transmit/receive unit comprising:

- an antenna receiving a plurality of communication signals;

- a plurality of channel estimation devices, each channel estimation device for estimating channel responses for a particular cell's transmissions;

- a plurality of blind code detection devices, each blind code detection devices for detecting codes used in a particular cell;

- a code selection device selects codes based on a result of each blind code detection device;

- a channel estimate combiner for producing estimated channel responses corresponding to the selected codes; and

- a joint detector having inputs configured to receive the selected codes and the produced estimated channel responses and detecting data of the selected communication signals.

Similarly, the Applicants' amended independent claim 50 recites:

A base station for receiving at least one desired communication signal, the base station comprising:

an antenna receiving a plurality of communication signals;

a plurality of channel estimation devices, each channel estimation device for estimating channel responses for a particular cell's transmissions;

a plurality of blind code detection devices, each blind code detection devices for detecting codes used in a particular cell, excluding a cell of the base station;

a code selection device selects codes based on a result of each blind code detection device and codes of a cell of the base station;

a channel estimate combiner for producing estimated channel responses corresponding to the selected codes; and

a joint detector having inputs configured to receive the selected codes and the produced estimated channel responses and detecting data of the selected communication signals.

There is no disclosure, teaching, or suggestion in the Okajima reference relating to a single "channel estimation device for estimating channel responses for a particular cell's transmissions" let alone a plurality, as the Examiner states. However, and also importantly, there is no disclosure, teaching, or suggestion in the Okajima device relating to a "channel estimate combiner for producing estimated channel responses corresponding to the selected codes." Indeed, there would be no reason for Okajima to utilize a channel estimate combiner when the Okajima reference does not even encompass a plurality of channel estimation devices. Moreover, the Hasegawa reference fails to cure the Okajima references lack of teaching.

Therefore, the Applicants' amended independent claims 49 and 50 are patentable over the Okajima and Hasegawa references, whether taken alone or in combination with one another.

35 U.S.C. §103(a) – Claims 7-9, 17-19, 27-29, 37-39, and 46-48

The Examiner rejected claims 7-9, 17-19, 27-29, 37-39, and 46-48 under 35 U.S.C. §103(a) as being unpatentable over Okajima et al. (US Publication No. 2001/0018346) in view of Hudson (US Publication No. 2002/0176485).

There is no disclosure, teaching, or suggestion in the Okajima reference of receiving an "undesired communication signal originating from another cell, identifying the another cell and identifying [a] selected undesired communication of the another cell." Nor is there any disclosure, teaching or suggestion in the Okajima reference of producing a channel estimate for a selected communication signal "based on that selected undesired communication." Furthermore, the Hudson reference fails to cure these deficiencies.

Accordingly, Applicants' claimed invention as claimed in amended independent claims 1, 11, 21, 31, and 40 are patentably distinct from the Okajima and Hudson references, whether taken alone or in combination with one another.

Claims 7-9 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 1 and are therefore patentable for at least the same reasons as patentable amended independent claim 1.

Claims 17-19 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 11 and are therefore patentable for at least the same reasons as patentable amended independent claim 11.

Claims 27-29 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 21 and are therefore patentable for at least the same reasons as patentable amended independent claim 21.

Claims 37-39 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 31 and are therefore patentable for at least the same reasons as patentable amended independent claim 31.

Claims 46-48 depend, either directly or indirectly, from the Applicants' patentable amended independent claim 40 and are therefore patentable for at least the same reasons as patentable amended independent claim 40.

Accordingly, the Applicants' respectfully request the Examiner withdraw the 35 U.S.C. §103 rejections.

Conclusion

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the Applicants' undersigned attorney by telephone at the Examiner's convenience.

In view of the foregoing remarks and amendments, the Applicants' respectfully submit that the present application is in condition for allowance and a notice to that effect is respectfully solicited.

Respectfully submitted,

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